UTAH INFRASTRUCTURE AGENCY (UIA)
SPECIAL CITY COUNCIL MEETING

On May 1, 2014 at 8:00 P.M. the Utah Infrastructure Agency (UIA) held a special City Council Meeting at the West Valley City Office, 3600 South Constitution Boulevard, West Valley City, Utah.

This was a Public Meeting, but not a Public Hearing. Those in attendance were not allowed to participate in the discussion unless called upon.

Present:

<u>West Valley City</u>
Mayor Ron Bigelow
Steve Vincent – Councilmember
Karen Lang – Councilmember
Lars Nordfelt – Councilmember

<u>Midvale City</u>
Paul Glover – Councilmember
Robert Hale – Councilmember
Wayne Sharp – Councilmember

<u>Murray City</u>
Mayor Ted Eyre
Jim Brass – Councilmember
Diane Turner – Councilmember
Blair Camp – Councilmember
Brett Hales – Councilmember

<u>Centerville City</u>
Lawrence Wright – Councilmember
Stephanie Ivie – Councilmember

Duncan Ramage - Macquarie

1. Welcome and Introductions

Mayor Ron Bigelow welcomed everyone to the meeting. He said that because there were multiple Councils from different cities in attendance, each Mayor will come forward and take their city's roll call just so they are officially in place for recording purposes.

He continued saying for example, with West Valley City there are four of their seven member council there; Councilmembers Vincent, Nordfelt, Lang and himself. Mayor Bigelow declared there was a quorum present for West Valley City.

Mayor Ted Eyre stated that Murray City has four of their five Councilmembers present. The fifth Councilmember has asked to be excused due to a recent surgery. The four Councilmembers from Murray City in attendance are Councilmembers Brass, Turner, Hales and Camp. Mayor Eyre declared Murray City has a quorum present.

Mayor JoAnn Seghini from Midvale City stated they have three of five Councilmembers in attendance and one more will be coming. Mayor Seghini requested a roll call for her Councilmembers.

Mayor Bigelow turned the time over to Kane Loader to get the meeting started.

2. Presentation of Macquarie Network PPP: Milestone One Report

Mr. Loader stated he is the City Manager for Midvale City and he is also on the Board of Trustees for UTOPIA. He thanked West Valley City for hosting this meeting. He is excited to get the Salt Lake County cities together and introduce this topic that is before them tonight.

Mr. Loader said that as a Board, they have been very excited about this proposal. He pointed out that this proposal is from Macquarie Capital, it is not the Board's proposal, it is Macquarie's proposal. Everyone is very interested in hearing what they have to say tonight. He pointed out that this is a regular City Council meeting for three cities; West Valley, Murray, and Midvale. It will be open to comments from the Mayors and City Councilmembers. He asked everyone to hold their questions until the end of the presentation, if possible. Mr. Loader reminded everyone in attendance that this is not a public hearing so they will not be taking comment from the public tonight. He introduced Duncan Ramage who is the Project Manager for this Macquarie Capital project and he has headed up the project team for Macquarie.

It was pointed out that there are Councilmembers from other cities in attendance who should be able to ask questions as well as the other Councilmembers.

Mr. Loader said they were welcome to ask questions. Questions will be open to any elected official from any of the eleven participating cities who are in attendance tonight.

Mr. Ramage said there are two individuals he may be referring to during the presentation. They are Ed Crowston and Mike Lee from First Solutions. Mr. Crowston has laid a lot of fiber and Mr. Lee has run a lot of telecom businesses so they are experts.

Mr. Ramage stated they have pulled a lot of resources together to get to this point. This is the product of about a year. They have tried to look at various different ways of applying their model, the Public Private Partnership model, to the UTOPIA situation. They are quite happy and excited to present, what they think, is a very compelling proposal. Like any proposal, there are issues with it. They are here to help answer questions about the proposal and offer different ways of looking at those issues that might be compelling

Mr. Ramage said that over the course of a year they have done a lot of work. They have talked to some of the ISP's (Internet Service Providers) in the market and Scott from XMission, Veracity, and Sumo is here. Our proponents in the DB side from Black and Veatch, our assistant mitigator and partner from Fujitsu, our network equipment partner is from Alcatel-Lucent and a lot of work with the various City Managers and folks like Dave Shaw and Laura Lewis and the various Mayors. There have been a lot of people involved.

Mr. Ramage stated that the donut dollar symbol on the front of his presentation may have raised more questions than answers. It has nothing to do with UTOPIA; it is Macquarie's symbol. It is called the holy dollar and it represents financial innovation. What happened was there was a currency crisis in Australia and they ran out of coins. They bought a bunch of Spanish coins and popped the middle out of them and doubled the currency. It was a fairly easy solution. This currency is no longer good to spend in Spain, but it represents applying some innovation to a financial problem; in particular in the public sector; which is what we are trying to do here.

Obviously, for context, there is an existing network out there which we would suggest is in an untenable situation. It is a good asset and has a lot of potential. A lot of money has been spent on it but it has not achieved its potential. It is subscale. It has about 11,000 subs out of a potential for about 160,000 subs. That is about 16% take rate by passings and only 40% or so of houses have been passed. Scale is critical to network success. It is critical to getting efficiencies of operating and marketing efficiencies. A good example is if you were an ISP and you were in the market but only 10 of you, and you are spread out amongst the market, could buy the product. How is the ISP supposed to market? A billboard would be inefficient as would be radio and print advertising. One of the biggest impediments to growth for the network has been this inconsistency and sub-scale rollout.

This network is also too small to attract national ISP's. There is a critical mass that is necessary to get the interest of the national players and it is not there. At the beginning when the prospect was that there would be 160,000 addresses, AT&T was interested. Unfortunately that did not work out. They have been talking to ISPs on a national scale, name brand folks, that….there is no deal yet. There is no deal with the cities yet so there is not too much to talk about there, but they are quite happy about the progress they are making with them.

Part of the reason the network is sub-scale is that there is a capital constraint. There was a bunch of money at the beginning and then money did not keep coming through and the network was not able to rollout as intended.

At this point, Mr. Ramage would offer that it is being run a bit on a shoestring. There is new money for new installations but that comes with the price of basically a lean on your house and a long term lease or the citizens can choose to front $3,000 or so. That is another big impediment for people to sign up.

The network does not currently cover its own operating expenses let alone the debt service on $200,000,000 of debt. Each year, or periodically the cities are asked to contribute to fill that gap. Their solution would wipe that gap out day one and would go a long ways to wiping out the debt as well.

The other aspect of the current situation that is important to note is that the roles are blurred between the ISP and UTOPIA. UTOPIA has had to kind of step in in certain situations to support ISPs and to market to provide customer service. They would suggest that is not really the best role for UTOPIA that UTOPIA should be a wholesaler and provide network connectivity. It ISP should left to do what their best at which is innovate on the network and provide services.

They think their proposal addresses a set of key objectives of the cities by keeping the network open, which is very important to competition, to the existing users, and to the existing ISPs and will create a ubiquitous network. The key prerogatives of the cities are to reduce that deficit and to defray the existing debt service, which totals about $500,000,000 over the next 20 something years. To address the fact that there is a disparity of build in the cities as a result of the fact that some cities were built out and some were not. West Valley City, for instance has not been built out nearly as much as its neighbors. That creates all sorts of parity issues amongst the cities. We would address that by building to everybody.

Certainty of execution. Mr. Ramage said he knows there have been various other folks that have tried to solve this problem over the past ten years. He would suggest that there are not very many viable solutions that carry as little risk of execution as this one. Macquarie does this for a living. They invest and develop infrastructure assets. They see this as an essential service and infrastructure asset; a utility. They make their bread and butter on building these things in partnership with the public sector. When they put something up on the screen, they mean it. They have about 120 large infrastructure assets that they own and manage which are worth about one hundred billion dollars globally. They include telecoms, assets, roads, bridges, and so on.

Obviously you do not get a successful network unless you have users on it that produce cash flow which produce network effects. That would be, they would suggest, a very likely outcome, hopefully an obvious outcome, of building this out. One thing to sort of put that into context; there have been other ISPs that have come through or various new marketing schemes that have been attempted to address the issue of why there are not enough customers on it. One is likely the fact that there is this big barrier to entry. The other is that it is hard for the ISPs to market. Mr. Ramage thinks the roll out of this would be the best marketing of all. Every house would be connected. There would be no longer a barrier to connection. The network would be right there for you to connect to.

Mr. Ramage said he wanted to touch on the provision of civic benefits. This is connecting all the public assets such as the schools and hospitals and providing Wi-Fi hotspots in parks. That sort of thing is made very easy with a udicodus fire buildup.

Lastly is competition. An open access network allows various ISPs to compete on it and to compete with the incumbents. What we have seen in other cases is where a new entrant has come into the market, in the case of Google in Provo, Kansas City, and Austin, you see a significant increase in speeds and a decrease in rates for users. Even if they do not join Google, their Comcast or CenturyLink bill drops. In Prove for instance, the triple play had decreased by about 1/3 ever since Google came to town.

Specifically, they are talking about rolling out a ubiquitous act of Ethernet open access network to every home and business in the 11 cities, about 160,000 addresses. The would be building into the growth that they and the cities project over the next 2 ½ years as they build it. There would be a network portal installed on the outside of every home and in the telecoms cabinet of every multi-dwelling unit/apartment building or commercial building with multiple tenants. It would be the responsibilities of the ISP from that point to take the connection from the outside in. They are alright with that. There are three ISPs here and they have said repeatedly that they are alright with that.

The structure, how we would get this done, is via a utility based public-private partnership (PPP). A public-private partnership is really just as it sounds; a contract between Macquarie, the private party and the public parties, the various cities, to basically provide a long-term service contract. They would agree to build, operate, maintain, refresh, and finance the network for 30 years. They would do so to very precise performance standards, to a fixed schedule and a fixed cost. If there is cost overrun, that is to their account. If the schedule creeps beyond the costs related to that, there are penalties that are for their account. Likewise on the operating side; there would need to be strict protocols with respect to how long the network is up and how long it takes Macquarie to get it back up if it goes down and so on; a clear criteria for performance and penalties for non-delivery of that performance.

Macquarie would introduce a wholesaler to sit between the PPP, which is really the infrastructure asset and the ISPs. The wholesales is a wholesales. It is a business development entity; one that creates new relationships with new ISPs sells to wireless carriers, and one that creates new ways of marketing and selling the asset. Again, the PPP is focused on keeping it simple, keeping the network going and building it to standards. The sales and marketing organization would be a different entity.

The wholesales would be supporting the ISPs and would not be getting into its business. They are not retailing, they are supporting purely the ISPs in their delivery to customers. Things like rebranding the network, defining new protocols for marketing and bringing new ISPs on and so on. The ISPs will do what they do best, sell and service customers. Critically, the PPP and the wholesaler will assume the operating deficit of UTOPIA at close. No more calls from the network to fund the deficit.

Obviously this comes with a cost. It is a big cost, about three hundred million dollars to build it and several hundred million dollars to operate it for 30 years. They would finance that with a combination of debt and equity and the revenues from a utility fee levied on every house, with some exceptions that can be discussed. The range for that fee is $18 - $20 per month per address. They would escalate that annually at a CPI, or inflation, and addresses in MDU's. Apartment dwellers would be charged half, $9 - $10 and businesses would be charged double. There would be a grace period of six months from when the trucks roll past the house and when the utility fee is charged; the earlier of when they actually connect or six months. This is to allow for the fact that the ISPs need to actually get out there and connect the businesses and residents.

In return for the utility fee, every house will get the infrastructure that will be connected to their home that is worth good money as well as a symmetrical basic service of 3 Mbps up, 3 Mbps down with a data cap of 20GB per month. They will show later on in this presentation that that compares quite will to other offerings in the market. It has its pros and cons. When designing this, the whole point of the basic service is to give people value for money, for their $18 - $20. It is also there to not be quite good enough for people that want to stream eight movies at a time or to watch video; to have a set-top box over the internet.

That is critical to aligning all the interests of the stakeholders here. If the ISPs, who are forced or asked, to provide the basic service for free to customers did not have the prospect of enough upgrades to a premium service that they would make more money from, then they would not be compelled to participate. The cities would also not be compelled to participate because a big part of the fees from those premium services go to the cities. The ISPs would continue to do what they do best. Offer what they already offer or innovate with new voice data and video solutions. The fees charged to the ISPs, which are $20 - $25 per house per month for a 100 Mbps circuit would be for the account of the cities, the wholesaler and the PPP, with the substantial, although the terms have not been negotiated, but it will be split to a significant extent for the benefit of the cities.

That is a summary of the roles. The agencies, which are UTOPIA or the cities, do not really have too much of a role going forward under this model. Macquarie would assume the responsibilities of designing, building, operating, maintaining and refreshing the network offering the basic service and making sure the network is able to provide the basic service. The agencies would, in effect, become a contract administrator. They would face the PPP and ensure Macquarie performs under the contract. The wholesaler would be involved in sales and marketing at a broader level and the ISPs would continue to do what they do best.

Obviously this is within the context of other cities and Macquarie expects the cities to look at their other options. There has been talk about shutting the network down. That would eliminate the operating deficit but it would also leave the cities with all their debt and no way of paying it down. It would also be a shame. There has been a few hundred million dollars put in the ground and walking away from it just is not the right answer. You have an asset there and you should make the most of it.

Selling the asset is a viable alternative in some cases. For instance, Google came knocking in Provo and Google may be next door in Salt Lake City. It is Macquarie's understanding is that Google may have knocked on the door here however, they are not knocking anymore. It is messy. Some other regional players may come and offer to buy the network and operate it under various models. Inject Capital is one. Whether they keep it open and how existing users, ISPs, and other stakeholders would be treated are very open questions. Whether they would have the capital to execute and whether they would have the ability to close the deal at all are other big questions the cities should be asking.

Macquarie does this regularly; this is a small deal for therm. They think they get green lights on all of those items which were discussed upfront.

One of the big things to talk about is that there is pretty much a comprehensive risk transfer from the cities. The design build risk of cost overruns, schedule delays, and execution is totally for the PPP's account. Going forward, it is basically purely gravy. Other than the utility fee, it is grave. There is a share of the upside revenues and no costs, no risk.

There is a big upside here. Based on analysis from Macquarie's independent consultants, based on what they see on other places in the market and based on the existing penetration in this market, they think that take rates for premium services would likely be in the range of 30-50% of users over the long there. That would generate at conservative transport fees, about 1 – 1.5 billion dollars of revenue. That is in addition to the utility fee. The utility fee is purely to cover the costs of operating and building the network. This is the pot of revenues that we would split with the cities that represents 2-3 times the existing debt service which is about five hundred million dollars over that same time frame.

Also, at the end of 30 years, the cities would be handed back an asset that produces about one hundred million dollars of cash flow per year. That is worth at least one billion dollars as well. This is 30 years from now so a billion dollars then is a little less than a billion dollars now, but it is a lot of money.

This really rests on the utility fee, they get that, it is a tough pill to swallow asking people to pay for something that they do not necessarily want to use. That is the crux of the whole thing. We would love to be able to do this without that, but we cannot. It just does not work. We do not get the financing that we need to make this happen at these sorts of prices. That is all predicated on a very tightly structured deal. The financing costs are under 10%, no other structure can match that.

In return for the utility fee, people will get the basic service. Macquarie would suggest that is good value for the money. Currently the basic, or entry level, services from the incumbents are $30 - $50. This is less than half of that in most cases. If a customer wants to add a phone line from CenturyLink, for instance, it is usually another $30 - $35. They can add a phone line on this for $5. They can go and buy a magicJack VOIP for $60 and never have to pay another phone bill again or they could use the ISPs and their solutions.

Even if customers do not use the network, Macquarie expects prices to go down. They reduction in prices in Provo was more than $20 on the Comcast package. The fact that there is a bigger network provides more competition. The step change in the size will bring new national ISPs, hopefully and achieve the efficiencies that this network deserves.

One of the big things about the ISPs here is that the current situation is, although there are some exceptions, there that not all the ISPs really need to commit too much capital to this, currently. This is because UTOPIA has been kind of holding them up in some cases and because there is no oweness on them to provide something like the basic service for free. In forcing them to provide the basic service for free, they are compelled to invest in marketing and their services and make sure that they sell. If they do not, then they do not.

The punch line here is that everyone is aligned. Between the cities, the wholesaler, and the PPP, the whole point is to make sure that we all share in the upside. We need to work out the exact details of what the shares are. Macquarie is suggesting that for a low take rate, the wholesaler does not really get much; it does not cover its costs. As take rates increase, the wholesaler takes a bigger and bigger piece. The cities stand to benefit substantially and pay down their debt, in most cases, entirely.

As far as the competitive landscape for basic services, you can sign up with CenturyLink for $30 plus a $120 for upfront fees for an internet only service that is, in some cases, as low as 1 ½ down and less than 1 up. That is rare. In some neighborhoods, it is as high as 40 down and 5 up. After that initial contract and after paying the $120, the price jumps to more than double what we are talking about for the basic service. A lot of people do not need 150 GB Data Cap. A 30 GB Data Cap is more than the average actually used. That would represent about one movie a day.

You could have your phone on. You could have more than 10 phones on all month and still be okay.

With Comcast, you can get a basic service for $30 the first month. When you read the fine print, it is actually $50 per month. You might get 25 down unless there are some folks on your block that are also watching Netflix, in which case you might get closer to 3. If you wanted to add a voice service it adds a $5 - $8 VOIP service. You would get that basic service with phone up to about $25. CenturyLink would charge you $70 and Comcast would charge you $83, plus an $8 modem.

The financing is critical to this structure so that the lenders want to do it; it is hard. It requires certain structural elements to make it work. Fundamentally the lenders will not face end user collection to make this work. They have to face the cities. So the cities need to contract, not pledge sales tax dollars or anything like that, but contract to ensure they collect the utility fee and if they do not collect the utility fee, to fill in the gap.

There may be under collection. There may be people that just will not pay and the city needs to step in to fill that gap. One of the ways to think about that that makes it a lot easier to swallow is that, say you had ten customers and one did not want to pay, but three of them upgraded which would be a 30% take rate. There would be more than enough extra dollars form those upgrades to pay for the one that did not pay. The lenders would require that those dollars from the upgrades are applied first rather than being split between the cites which makes a lot of since.

Lenders do not want to take the revenue risk and they would prefer outsourced operations but that to be negotiated.

Macquarie got to this point with a lot of work. They ran a RFQ process to select a design build partner. The went to 14 name brand, in some cases global, design build operators. Through a rigorous process, shortlisted that to two. One of them is here today; Black & Veatch, the other is Corning. Both of those groups are extremely good at what they do. Both of them have laid a lot of fiber. Corning has probably laid more fiber than anyone and they obviously make the stuff as well. Both have provided indicative estimates of what they think it would cost to build this. That was a critical element of putting into the model what the utility fee would be. Again, the utility fee is purely a reflection of the cost. It is the cost of designing, building, operating, maintaining, refreshing, and financing this for 30 years.

The biggest piece of that is building it. Macquarie took a lot of care to ensure they had a good estimate of this stage, Milestone One of several, to be able to put a number forward that they have a lot of confidence in.

UTOPIA also prepared an internal estimate and all three of those ended up in the same ballpark. Macquarie had an independent technical advisor also look at them to validate them. It is a pretty real number.

Both of those proponents, Black & Veatch and Corning would work over the course of subsequent milestones, if we precede, to provide an actual firm, fixed priced bid. That will cost them, probably about a quarter million dollars each to do. That way Macquarie maintains competitive tension between them and they make sure that the design that one provides can be validated by the other. That is important to make sure that costs stay down.

Macquarie also went through a similar process to select a network integrator; someone that would make sure that it all works. There is a lot more to this than just putting fiber in the ground. There is the integration of all the hardware and making sure all the software works and so on and so forth. Macquarie has selected Fujitsu to do that. They are the best in the class. There is a representative from Fujitsu here tonight. On the equipment side, Macquarie has selected Alcatel-Lucent. They are also a global name brand. Alcatel-Lucent currently supplies the equipment to the existing network and they are all very good. They all provided cost estimates as well that went into the utility fee estimate.

Macquarie also looked at the existing operations. Are they run well? They had to separate out what is being done now that probably should not be done going forward. That should be the onus of the ISPs. They looked at what they think it would take to self-perform the operations and maintenance and what it might take to outsource some of that. It is an obvious question to ask and so they looked at both of those and provided estimates. Macquarie's estimates are based on self-perform.

On the market side, it is one thing to build it but if no one comes it does not do anyone any good. Macquarie commissioned a study from a group called CTC to address questions like what will the take rates be, what transport fee should be charged, what will be the competitive reaction, and what considerations might we have with respect to marketing and so on. That was a valuable report and it suggested take rates of 30 – 50%.

Macquarie also talked to about 700 folks in the market to get a baseline read, not a comprehensive read, but a baseline read of what attitudes are like, what people use for telecoms, what they think of UTOPIA, and whether they pay too much or like the service levels and so on. One thing that has come out is that people that have UTOPIA really like UTOPIA. It is fast and good and folks like Veracity, XMission, and Sumo provide good service. UTOPIA has a bad name because of all the other stuff, but once you are on it, it is actually really, really good.

Macquarie also spoke to about 24 folks in more detailed focus groups to get their more detailed understanding of their buying behaviors and how they view the market dynamic and incumbents. They also sat down with the ISPs a couple of times to make sure that what they are proposing here makes since for them.

At this point, Macquarie is operating under what is called a pre-development agreement that they signed back in December to work towards this Milestone One. There is a 101 page document that they have released that goes into a lot more detail than this presentation. This slide deck, that is being presented, and a more detailed slide deck are up on the website: gofiberutah.org. This information has also been provided to the cities. That is Macquarie's deliverable for Milestone One.

There is a lot more work to do as Macquarie has not answered a lot of questions. They have not negotiated the final details with the cities. They have not negotiated term sheets with the lenders. They have the broad strokes and if they proceed to Milestone Two, the following up to 60 days, of review of the cities they would be undertaking that next level of work. Working out a lot of the questions and spending a lot of money on lawyers to make sure this all fits together. That is going to take a lot of work, a lot of time and a lot of money. Macquarie wants to make sure that at that point the cities are on side. No one is interested in wasting anyone's time or money.

At this point, what Macquarie is asking the cities is does this work for you. There are other options; asses those. Think about what this means. The headline "$20 Utility Fee that Everyone Pays" does not resonate well. But, if you put in into context with the value for money, if you put in into context with your other options, and you put it into context with a very real ability to pay down your debt and the immediate elimination of the operating deficit, those things kind of counter the bad. Mr. Ramage would suggest that they strongly counter the bad.

To have everybody in the city with a connection that they can go up to 1 GB and beyond or just use voice or basic internet is an asset for now and for 30 years. It is for your kids, your schools, your hospitals. It may not seem critical right now, but internet connectivity in 5 – 20 years is a critical asset. Mr. Ramage said he could answer any questions.

Ted Eyre, Murray City Mayor
Mayor Eyre expressed his appreciation to Mayor Bigelow and West Valley City for hosting this tonight. He also thanked Mr. Ramage for his time as Mayor Eyre knows this has been a long three days for him. Mayor Eyre said he had a number of questions. There are some really important questions that all of them would like to take the opportunity to ask.

Mayor Eyre told Mr. Ramage that he brought up a number of things tonight that were kind of more important than the questions he had written down before he heard the presentation. He told Mr. Ramage that in the previous times he has heard him talk and in some of the other written format he has read and gone over with other people, Mr. Ramage has talked about the escalator after the first year. Mayor Eyre was under the impression that that escalator was not absolutely determined, and yet tonight, you said that the escalator will be the Consumer Price Index (CPI). Has that been determined that that will be what the escalator will be determined by in the preceding years?

Mr. Ramage responded that it has not been agreed formally. Macquarie assumed that for the numbers they have run. They would expect it makes more since to have an escalator to keep the number low now and rise with incomes going forward, but they are open to other means of escalation.

Mayor Eyre verified with that Mr. Ramage that when he said tonight that it would be the CPI; he just meant it would be the CIP or something similar to that type of an escalator.

Mr. Ramage said another agreed upon index.

Mayor Eyre said with regards to the three megabits up and down, the cities understand that with regards to speed, but with the data cap, in the Orem meeting they attended there was a question asked in that meeting that kind of got the Mayor's attention. They asked what would happen once that cap is met during the month. In the olden days, two or three years ago when he had a cell phone and it had a limited amount of data capability to it; during the time that we did not have the unlimited and we had a certain amount of data that we could download throughout the month or billing cycle, once you reach the end of that, then they would charge you more once you went above that. Yet the question was asked on Tuesday night, what would happen at the end of that 20 GB and they were told the service would stop. He asked Mr. Ramage if they meant they were going to shut off peoples internet service at day 21 because they have reached that and they do not get it until the beginning of the next cycle.

Mr. Ramage replied that they are contemplating the model would be like the cell phone data plan where indeed you would need to buy additional minutes, if you will, or buy additional data cap capacity. They would expect that the PPP does not provide that. That the ISPs can innovate over the network and potentially provide increased data caps.

Mayor Eyre verified that it would be kind of like what people get on their cell phone. They get a warning that they are getting close to your maximum amount and you will be charged more if you exceed that, but not just shut off the internet.

Mr. Ramage replied that was correct. The PPP would undertake to deliver the 20 GB and that is it. Without an ISP innovating over the top, providing additional data, yes it would shut off. That is how they are contemplating it now.

Mayor Eyre said okay. He added that he did not want to labor that a lot but it took him a while to find out how much data he was using every month until he could determine which plan and how much he had to buy each month. It was kind of a guessing game before he learned that.

He asked Mr. Ramage if they have a priority on the build out. For instance, West Valley City might have 10% or less while Murray might have 60% or more. When they build out the system is there a certain priority that you are going to build out certain cities first to bring up to a certain level or will it be ubiquitous through all the cities. Mayor Eyre said he knows that Macquarie is going to do about 250 homes a day. He asked if they were going start with the cities that have the least amount of service or will they start with the cities that have the most and get them completely built out. What is the priority on build out?

Mr. Ramage said they have not discussed that. That would be for Milestone Two. As a framework, their primary motivation would be to keep costs low, initially and keep cash flows high, initially. They would look to consider ways of addressing parody issues to overlay that concern.

Mayor Eyre asked if there would be, in that priority or the decision how that priority will go, would there be the things like the 'sweet spot' that we were taking about. We are going to build out that area that we think would have the highest and quickest take rate and everything. Would that be a priority that Macquarie would do that 'sweet spot' idea.

Mr. Ramage stated they have not determined that and he thinks that is for later design. They are open to suggestions on it.

Mayor Eyre said it seemed like the decision for Milestone One when we would get the utility rate was pushed back a week, then two weeks, and then a little bit longer. He would anticipate that maybe the reason for that delay; he thinks it was initially the first part of April, then April 15, then April 18; he would anticipate that was because it was a little bit more complicated than was previously thought. If that is the case, Mayor Eyre asked Mr. Ramage if he anticipates now that Macquarie has the experience of going through Milestone One that he would anticipate that maybe the predetermined length of time for Milestone Two or Milestone Three might also be stretched out a little bit because of the difficulty of this.

Mr. Ramage said as part of the decision to move forward to Milestone Two, he believes they should take a fresh look at the future milestones and how long they will take. Knowing what they know now, absolutely. He could not say whether it would take them more or less time. One of the big things they moved forward was they got a lot more granularity on the design build side than they had anticipated at this stage. He thinks they are further progressed on that size whereas on some of the legal analysis, they are probably a little bit further behind. They need to recalibrate knowing how the parties work together and what we need to do to get this through Milestone Two. He said he is not sure what the answer is at this point.

Mayor Eyre said that is what they kind of thought. You learn a great deal the first time you go through it and then you have to apply that to subsequent times.

Mayor Eyre said that two days ago, they were down in Orem and prior to that meeting, even up to several weeks, he had had a good number of conversations with Mayor Brunst and he brought this up. At that time, he was kind of confused where he maybe accidently confused Mayor Eyre, in the fact that there was either a 30 day period or a 60 day period, he talked about a soft period and a hard period. Then Mr. Ramage addressed the question two nights ago saying no there is not that 90 day and 60 day period, there is only a 60 day period. He asked Mr. Ramage to address where that confusion came from and what that hard and soft period is all about.

Mr. Ramage said that in the PDA there is a 30 day soft review by the committee, if you will, that has been undertaken. Upon delivery of Milestone One, under the PDA, the 60 day clock starts. The 30 days have passed.

Mayor Eyre said that as Mr. Ramage showed on the dates, it was 60 days from that first date. He said the other question he has is the only area of the structure that he is fuzzy on; he understands the existing network and the PPP, he understands the ISPs and he understands the service he is going to offer and the end user. The only part of that whole structure that he does not really have a comfortable grasp on is the wholesaler. He asked Mr. Ramage to explain that a little bit simpler so that he can understand who is the wholesaler and how is that wholesaler developed. He kind of understands what the wholesaler role is, but he does not understand who it is and how it is structured.

Mr. Ramage said he would call on Mike Lee in a minute. Mr. Lee is Macquarie's candidate to run the wholesaler. Conceptually though, the reason that there is a separate entity is because the business of the wholesaler is substantially different and riskier than the infrastructure player, the PPP. Combining the two changes the risk profile of the PPP and it will impact the financing costs.

The wholesaler will be responsible for managing the ISP relationships, business development, and branding protocol as well as various other things that Mr. Lee should answer.

Mr. Lee said that to Mr. Ramage's point, the WSP responsibility is really more of a business development role. One of the things, for an example, that they will be able to bring to the table is really volume scale. They might be able to go to Netflix and sign up as a CND partner. What that essentially means is they would go to Netflix and say we would like to partner with you. Right now what happens if any of you want to go to Netflix, it is a unicast or a one to one relationship. You are taking somewhere around 2.5 or 3 megabits per second of bandwidth which goes through your ISPs connection. Imagine ten or 100 or 1,000 users of Netflix and very quickly you will find that the ISPs connections get bogged down. It is a significant expense to the ISPs.

You may have read in the news that Comcast has negotiated a deal with Netflix in order to try and reduce this. One of the things that Netflix has done is created a CDN partnership program. That is cash servers. In other words, all the content that resides on Netflix's servers would reside locally on net; meaning it would reside connected to the UTOPIA network. Rather than utilizing the ISPs bandwidth by going out to the internet, it stays on the network where there is sufficient capacity to be able to serve all the customers.

The reason why you would need someone like a wholesaler to provide this service is because the company Netflix will not deal with a small volume ISP. They are looking for significant volume partners. There is a significant expense associated with delivering these servers at their cost. A company or an entity like a wholesaler would be able to provide that volume scale.

Another example might be the procurement of electronic equipment. As a large aggregator, as a wholesaler, the wholesaler would be able to go to an electronics vendor like Sysco, D-Link, or Linksys or anybody else and negotiate a volume discount based on 160,000 passings versus an ISP who has maybe 12,000 subscribers. There is a benefit to everybody.

Another value that you derive with the wholesaler is marketing guidelines. One of the issues there has always been with UTOPIA is there has been an inconsistent message around the UTOPIA brand. You really need someone to police that. You need someone to say, "Here are the marketing guidelines and here is how you are going to position the brand." It is a platform, it is not a service. The service belongs to the ISPs. You need someone to corral the ISPs and provide that. You also need someone to police the ISPs and monitor whether or not they are performing. One of the things that First Solutions is 100% sure about is that they are going to have SLAs in place. All of the ISPs will be subject to said SLA's and if they find that the ISPs are not in compliance with the SLAs, they are off the network. If they find that an ISP has rejected a basic service to a customer, they are off the network.

We need to ensure we police and satisfy the satisfaction of the end customer. Likewise, if they are removing ISPs, they need to ensure they are going out to the marketplace and identifying large, good quality, well equipped operations, or other ISPs, and bringing them onto the network. For a company like Comcast, this is an open architecture. There is no reason why Comcast could not operate over this infrastructure. That would be the role of the business development arm of the wholesaler. There is also no reason that CenturyLink could not participate. AT&T has just announced that they are looking at 100 cities across the U.S. and deploying fiber services. It makes a lot of since. They could even go to Google and tell them they are just south of us, you have an IP infrastructure already; there is no reason why you could not come in and provide services on the network here either.

These are things that as a wholesaler, as an aggregator of the services of the PPP, we bring to the table. There is also a financial component; the ease of financing.

Mayor Eyre said he hopes this clears it up for the vast majority of people; although he is not sure it did for him. He said it was a great explanation; he was probably just unable to comprehend it all.

A question was asked about what an SLA is.

Mr. Ramage stated it is a Service Leven Agreement. It is the contract between the network and the ISP.

Mayor Eyre said the thing that he was concerned about is that it seemed to him the way that was set up, it was to reduce the risk of Macquarie. He can see that, you want to reduce your risk. However, if things go really south, then the wholesaler would take the hit instead of Macquarie. He asked if that was correct, that the wholesaler kind of acts as a financial buffer between Macquarie and the network itself.

Mr. Ramage said he would suggest it is actually more of the opposite or at least that Macquarie intends on capitalizing both the wholesaler and the PPP. The reason to isolate, or de-risk, the infrastructure asset is to get more efficient financing, and that drives the utility fee. What the wholesaler does has really little, if any, impact on the utility fee, whereas the utility fee is driven purely by the cost of building and financing the network.

Mayor Eyre asked about the upgrades. He said he would anticipate that Macquarie would have like at Tier One as the entry level. Then you would have maybe a Tier Two, Tier Three, and a Tier Four plan. Mayor Eyre asked what Macquarie anticipates those tier would be, but more importantly, that is where the cities are going to get some of their revenue back; from these upgraded tiers. Mayor Eyre said that Mr. Ramage suggested that cities are going to get a large proportion of that. That is not very specific with regards to a percentage. Is that total pie going to be split three ways and if so is it 50, 25, and 25 or what does Macquarie anticipate other than just kind of a large portion of that.

Mr. Ramage responded they have not negotiated that; that is for Milestone Two. He said he would suggest that, especially at the low end of take rates, the significant majority would go to the cities. The PPP only gets a small amount basically to align it to ensure that the network is available to provide, not just the basic service, but is also being run to provide premium service delivery. Also, to recognize that there is an increase cost of providing more services. The framework for the wholesalers take has suggested, without numbers - and he understands this is frustrating and they want to get to that very quickly, would be for an unimpressive take rate, whatever that is, the wholesaler does not make money. They probably lose money. For an okay take rate, the wholesaler breaks even; does okay. For a 30% take rate the wholesaler is doing quite well and if you get to 50%, the wholesaler is doing very well because everyone is doing very well.

Mayor Eyre verified with Mr. Ramage that he was unsure of the percentage that the city would get. It would be substantial. He said if he was going to sit down and try to figure out some hypothetical cases such as, “This is what I guess Tier Two will be and this is what I guess Tier Three would be” and how much the cost of that would be compared to some of the other competitors. If he were to do that, he asked Mr. Ramage if it would be inappropriate in saying he would think, being that Mr. Ramage cannot be really specific because they have not worked out those numbers yet, that the cities would get a portion of at least 50% of that. He asked Mr. Ramage if that would be ridiculous for him to put in his figures when he is figuring that number.

Mr. Ramage replied that would not be ridiculous. He added that to address the first part of Mayor Eyre’s question about the tiers, right now UTOPIA provisions a 100 Mbps switch and a GB switch, or a circuit. The ISPs are free to sell what they want. Macquarie anticipates remaining out of the ISPs business, allowing them to address the market as they would best see fit.

That said, along the lines of what Mr. Lee was suggesting with respect to consistency of message and consistency in the market; this resonates a bit with some of the independent analysis that they had from CTC. In light of what Google is doing, Macquarie is considering for Milestone Two, potential ways of providing a little bit more uniformity in the market so that they can maintain the brand. That may be, for instance, only selling 100 Mbps and GBs rather than trying to compete on a speed basis with Comcast, which frankly, you probably should not do. If you can provide much, much faster speed than Comcast, he would suggest you should sell products that blow them out of the water.

Mayor Eyre said his next question has two parts. The system right now is ten years old and he realizes that fiber does not break down, but all the switching does and everything else. When Macquarie builds out this system, are you also going to, at the same time or at the end which is about 30 months to build out the system, would you be refreshing the existing system and the same time or would they wait until that is all built out then go back and start a cycle of refreshing by starting with the stuff that is already in the ground and is ten years old.

Mr. Ramage answered that the first thing they would do is refresh the entire system which they anticipate would cost about $40 million. This is a cost that will need to be incurred, maybe a little bit less over time regardless of what happens with the transaction.

He continued saying that over time they would be committed under the concession agreement to continue to refresh the network hardware and continue to keep the network in operating condition throughout, to performance standards and upon hand back to the cities.

Mayor Eyre said that was the second part of his question; what condition would the cities get the system in at the end of 30 years. Would it be completely refreshed enough at the end of that or would it be ten years old by the time we got it because nothing had been done in the last ten years. Mayor Eyre verified that the condition of what we would get back at the end 30 years would be a refreshed, current system.

Mr. Ramage said it is a point to discuss in later milestones; exactly what that mechanism looks like. In other concessions like this there has been an eye to exactly that issue. The concessionaire effectively kind of running down the network to hand back and there are mechanisms that allow for protections against that.

Mayor Eyre said that yesterday morning, Mr. Ramage was able to meet with all the ISPs again. Mayor Eyre was able to be with him the evening before that and hear what he had to say about the ISPs, but you were very interested in meeting with all the ISPs again that morning. During that time, were you able to receive any additional insight or information form the ISP side that you did not have the evening that he spoke in Orem.

Mr. Ramage said the message has been consistent. They have been very receptive from when Macquarie first started talking to them about what the parameters of the network are and since upon delivery of the Milestone and some of the details, they have continued to express their support.

Mayor Eyre asked Mr. Ramage what type of commitment Macquarie is going to make to the city to help them, if they determine to go forward with this, market this to the residents. That is going to be difficult and time consuming. The cities are going to need all the horsepower they can to do this.

Mr. Ramage said they are very aligned in that. They recognize that the materials that have been provided are not as digestible for the messaging that you may want to undertake, particularly without Macquarie there to explain the details on the spot. They have set up a website, gofiberutah.org that has a video and some more information about the benefits of broadband and so on. It has FAQ's about the transaction proposal that is more digestible for the citizens.

Going through this process over the last few days has highlighted, to him, that there are other ways of presenting some of this information that are more digestible and they will pull some of that material together. They will be available to speak to the citizens and Councils as they require. They are absolutely on the same page about making sure that everyone has the information they need to make the right decision.

Mayor Eyre stated that when they met with Nick about a month and a half ago and in the meetings with Mr. Ramage, Nick was asked a question about if all eleven cities do not go along with this, what he needs to continue with it. He said, and these are his words, "We are going to need a necessary critical mass." That was his response. So if all eleven cities do not go along, then obviously you need a certain amount of that critical mass to go forward. He asked Mr. Ramage if that critical mass has yet to be determined. Things like how much of the cities, how many of the cities, and what shape the cities are in with buildup and everything else would need to be determined, is that correct?

Mr. Ramage replied they assumed for the report that all eleven cities participate. It is not easy math to take cities out. There is a point at which scale breaks down. There is also the fact that by treating them all the same, the disparity that has happened is addressed, almost in reverse. In other words, in a place like West Valley, which is under built relative to other places, they receive a bigger share of the incremental costs. There are all sorts of parity issues between the cities and it is not Macquarie's role to get in between. They recognize that is an important question and they are keen for the cities feedback for them to run different analysis.

Mayor Eyre said it is presumed, however, if one or two of the cities do not go along, the result of that would be that would be that the remaining cities in the program would then have to pay a higher utility fee.

Mr. Ramage said that is likely but not necessarily the outcome.

<u>Steve Vincent, Councilmember, West Valley City</u>
Mr. Vincent said that with a lot of users now because of the proliferation of wireless devices and such many of the users would probably never use a hard connected line to their home. He said that Mr. Ramage spoke about adding value and briefly mentioned hotspots in parks and such. He asked Mr. Ramage to touch a little bit more on how value can be added to users who may never use a hard connection.

Mr. Ramage said he would let Mr. Lee answer this in a little bit more detail, but every house that has Wi-Fi in it is ultimately connected by a hard line. The example of someone that only uses a cell phone is a situation where someone might never actually use this connection. The cost of using that connection; the data caps on mobile devices, are substantially inside the 20 GB's for instance. You cannot easily watch movies over your cell phone at least not on a very big screen and in fact you would be bumping up into the very expensive data caps very quickly.

Mr. Ramage continued saying all of the wireless carriers backhaul all of their cell data over fiber because they recognize that it needs to get out of the air and into the ground because there is just not enough spectrum in the air to carry all of that data. There has been this talk about whether wireless will overtake fiber, but really there is just too much data to be floating around in the air and it all finds its way back to the ground.

Mr. Lee added this is a question that is near and dear to his heart. He has four people in his family and unfortunately between the four of them they have 15 mobile devices between tablets, wireless laptops, cell phones and so forth. The basic service connection that First Solutions is providing is an active Ethernet connection. All a home owner would have to do is either contact one of our service providers who would be more than happy to come in and provide an wireless gateway router and set up that service and in addition to that provide the support mechanism to be able to continue to operate on a regular basis. If a customer chooses to just simply keep the basic service and wants to avail themselves of wireless connectivity, it is just a matter of going to Best Buy, Wal-Mart or Target and spending $25 - $40 for a wireless gateway router, reading a very simple pictographic instruction sheet and they would be up and running.

Mr. Vincent said that as elected officials they hate to do is to impose fees or taxes on our residents, particularly on those that are on fixed incomes or those who are low income. He said he does not know if there is anything in the model that addresses those types of situation.

Mr. Ramage said they recognize that is a big concern. It is one thing to ask a relatively wealthy person for $20 per month and it is another for someone who is not. One way they have seeked to address that off the top is by offering a 50% discount to people in apartments. The other way that they would suggest is the cities would potentially recommend an approach, for instance, like what is used in the property tax world with a circuit breaker concept where under certain income there is relief. He added they are open to those sorts of suggestions. They recognize it is an issue.

The other thing that Mr. Ramage said he would suggest is while not everyone uses the internet, a lot of poor and elderly folks have phones and are likely paying more than the basic service for that phone line. In reality, this could be saving them money as well from their current situation. He reiterated that they are open to suggestions about how to address that issue as they realize it is very real.

Mr. Vincent said he would be interested at some point tonight to hear from some of the service providers also.

Blair Camp, Councilmember, Murray City

Mr. Camp asked Mr. Ramage if it would be fair to say that in this Milestone One really what we are deciding to do here is decide if the utility fee is palatable and if so then we will move forward. He added there are a lot of questions that are just not answered and as Mr. Ramage mentioned tonight, a lot of them are Milestone Two and so in. Mr. Camp asked if it was fair to say that is really to take this concept and say do we want to move forward with a utility fee model.

Mr. Ramage replied he does not think that is an unfair characterization. Certainly they would expect that if the cities want to progress they have gotten comfortable with the concept of the utility fee.

Mr. Camp stated that having said that, he has a couple of other questions. He told Mr. Ramage that he mentioned earlier that this model has been used in various places around the world. He asked if there is a place that uses this utility fee model in a PPP that is in operation now, that is similar to this that they could compare take rates and so forth.

Mr. Ramage said this application of the PPP model and the application of the utility fee is, as far as he understands, unique. He said he did not mean to suggest otherwise. What they looked at in other networks were, in fact, a little different in that regard. They looked at other municipal, ubiquitous fiber builds, for instance, and the take rates in those neighborhoods and those cities.

However, they were not under a formal PPP arrangement and none of them have a basic service concept with a utility fee. The closest analog to that is the Google example where you get a "free" service and the ability to upgrade to a GB. Unfortunately Google is extremely secretive with their take rate data. Macquarie has it anecdotally that it is very attractive take rates. That is partly because of their approach to the market by only building where there is demand ahead of time which is a nice luxury, but not one they are proposing here. Obviously with that, you do not get ubiquity.

He added that as far as they understand, this is the first time that this model has been applied in the telecom space. Certainly it is an application in other delivery of essential services or public services. It is very analogous, for instance to garbage delivery where for a set price per month you have the right to put your garbage out and it be collected. You do not have to use it, but you are charged for it regardless. The garbage collectors have a monopoly in that case because they are under contract by the cities. Whereas in this case, there is no monopoly, it is open access for anybody.

Mr. Camp said that Mr. Ramage mentioned briefly that they would be planning for new connections on build out in cities as developments happen and so forth. He asked if the number that was given to the cities originally be adjusted with growth or is that the number that cities would be responsible for that many rooftops going forward or does that adjust as new construction happens.

Mr. Ramage replied they have not worked out all the wrinkles of exactly how to address new build in the cities. The idea is absolutely to build to every new development and when it is a new development the costs of doing so are relatively low. To wire a new MDU or to wire a new residential neighborhood while all the other utilities are being put in place is quite a cheap proposal. The caveat that you would likely see is that it would be subject to financing, but they do not anticipate that would be an issue.

Mr. Camp said that on the website, gofiberutah.org, it does state that Macquarie would be the network operator and wholesaler, but that is not the case from what he has heard tonight.

Mr. Ramage said that would be the case. Macquarie is partnered with First Solutions in both. The PPP would be very likely entirely, and if not entirely a significant majority, Macquarie. The wholesaler is a bit more aligned with the investment parameters and capabilities of the partners and First Solutions and that would be more of a partnership. They would certainly be involved in the wholesaler.

Mr. Camp said so that is not something the cities or UTOPIA is going to be making the decision on, it will be Macquarie.

Mr. Ramage said they are open to suggestions about parameters for that by the cities but it is a private enterprise under a public-private partnership.

Mr. Camp said to Mr. Ramage that he mentioned earlier that there is no risk to the city, but Mr. Camp wondered about collection risk. He thinks you have to recognize that collection risk is a risk and if there is relief as he mentioned a moment ago, for people who are unable to pay, is that relief born by the cities or is that absorbed into the cost of running the network.

Mr. Ramage replied they can address certain relief concepts ahead of time and structure the contract and the utility fee to address that. In the case of lower income below a certain threshold, they would identify that upfront and provide relief. Then in effect, the utility fee would be adjusted. After the fact on a go forward basis under the contract, if there were under collection from the citizens that was agreed to collect from under the contract, that would be the city's risk. It is absolutely fair that there is some risk to the cities with respect to under collection.

Mr. Camp said the report summary states and Mr. Ramage mentioned earlier, a 30-50% take rate. That is a really wide range. Mr. Camp asked if the assumptions based on a 30% or 50% take rate.

Mr. Ramage said that assumption only really drives the size of the pie or wholesale revenues to split between the cities, the wholesaler, and the PPP and they have not negotiated those splits. The utility fee does not depend on those take rates whatsoever. The utility fee is independent of that. They recognize it is a fairly big range and he wishes he could tell everyone what it would be.

Lawrence Wright, Councilmember, Centerville City
Mr. Wright said there were concerned about the hard shut off and the impact that would have on emergency services, 911, services. He said he is assuming that they will probably make sure that they still conform to the law on that and the ISPs allowing some of those 911 services to remain functional so that if somebody calls and are having a heart attack that an ambulance can come and service them. He asked if that was something they were looking into.

Mr. Ramage said it is not necessarily something that has been etched in stone at this point. There are several different mechanisms they can employ versus a hard shut off. As a customer approaches that band limits, the 20 GB cap, what they can do is throttle down their service such that is not interrupted but it is such that critical services would still work, such as phone systems. The typical voice over IP band width requirement is under 1Mbps, it is 250-500 K, depending on the quality of the service. They can continue it such that voice services would work but the ability to stream videos and visit websites would be critically impacted.

Mr. Wright said that makes since. There might be some biometric data that is being passed to hospitals for elderly people and those kinds of things and it would be nice if that was still in tack.

Mr. Ramage said there are two things to keep in mind in those kinds of situations. One would be a SLA agreement between the ISP and the hospital or the critical emergency service such that those kinds of situations do not occur. Another possibility is depending on the entity, a school system for instance, that relationship could potentially handled directly by the wholesaler. The wholesaler would then agree to address those kinds of issues.

Mr. Wright stated he hopes that would be included and that discussion will continue as they move forward so that it is clarified.

He said one of the concerns he has had has been on the escalation cost and even if it is linked to a CPI or an inflation rate, he is concerned, knowing that our country is 17 trillion dollars in debt and we have an artificially contained inflation situation that could change very quickly. He is concerned those escalation costs could get out of hand once they are tied to an index such as that. He asked if there would be some kind of cap on what that utility fee would be or would there be some kind of arbitrating group, such as a citizens group, that could look and make sure they validate or prove those utility fee increases, the escalation costs. At the end of the 30 years if you have a consistent escalation year by year, those utility rates could be fairly high.

Mr. Ramage said the reason why they have set it to escalate rather than to be flat is so that it is lower today and higher in the future when incomes are higher and were cost of living is generally higher and there is more money to go round. The concession agreement will enshrine for the escalation methodology and he cannot see a situation where there would be a review of that going forward given the financing would be dependent on it.

Mr. Wright verified with Mr. Ramage that he was saying that he does not see some kind of a Commission or Board that would help regulate the utility for the eleven cities and the rates.

Mr. Ramage said no. They nice thing about the CPI is that it is independent and not subject to discussion or ambiguity.

Mr. Wright said that from a business since he can see that. From governance perspective, and we are looking at high tax rates, he sees that as problematic. That is something that can be talked about as they go forward.

Mr. Wright said his last question has to do with the viability of the network at the end of the 30 year period. The viability of the network at 1 GB 30 years from, he is concerned that this is really going to be more of a dinosaur. We may have the best 1 GB system in the United States but it may be a dinosaur compared to any new technologies that will come along easily within a 5 – 30 year period. That is one of his concerns; that 1 GB may not be compatible with the existing technology even at the lowest level. He asked Mr. Ramage to address that.

Mr. Ramage said that from a contractual nature, they are anticipating now and are anticipating it will be developed further in Milestone 2 is that they will contract up front to provide a certain level of speed and network capacity. This is one example of where there could be a review on a go-forward basis of whether or not to increase that capacity. The fact of it is though is that over the course of 30 years there is a perfect alignment here really. In order to provide up sale revenues, the PPP will want to ensure it is capable of providing those next generation services. It will be compelled to, and that is why it gets a share of the revenues, ensure that it has the network to deliver, not just the basic service, but the premium services.

Mr. Wright stated the reason he asked that question is because in the slide where they showed the roles of each one of the entities that are involved in this, they put the responsibility on the cities to upgrade the network. Mr. Wright said that what Mr. Ramage is talking about makes since, its market driven and the ISPs want to have a competitive network for their service providers to use and market their services. Mr. Wright asked is Macquarie put pressure on the cities to spend money to upgrade that to provide some of those services. That is what Mr. Wright read from that slide.

Mr. Ramage replied he thinks they need to further flush out exactly that mechanism in Milestone 2.

Mr. Lee said he wanted to address the technical portion of Mr. Wright's question. The thing to keep in mind with bandwidth utilization over the next 30 years is that applications that are developed in the future will really be applied towards the vast majority of the internet. In other words, a company such as Netflix won't really say 100 Mbps service today because the vast majority of the subscribers in the internet universe would not be able to avail themselves of that service.

It is really tied to the lowest common denominator. Until the vast majority of the DSL and dialup users are upgraded the belief today, and none of them can really predict what is going to happen in the future, but the belief from a technical perspective is that the lower end of the bandwidth utilization curve will predicate….and it makes perfect economic since because the business are going to want the vast majority of the internet users to use their service in order to make margin. It is really tied to that in that effect. If Macquarie and First Solutions were successful enough to deploy a service like this across the entire county, that would be a great problem to have.

<u>Stephanie Ivie, Councilmember, Centerville City</u>
Ms. Ivie stated that Mr. Ramage mentioned the delay in getting the information to the cities was because it was a little complicated. She would submit that it is also complicated for the cities to look at it. Her instinctual reaction is to say when there is a salesman at the door and he says, "You have to buy today," she says she is done. She does not care how good the product is, she does not want to buy it because of the pressure. She thinks this would be an easier sell if the cities had more than a 60 day window to review that and really study what they are getting into.

Mr. Ramage responded that 60 days was decided upfront as what members of the various committees, in particular the Board of UTOPIA, thought was appropriate. Knowing what they will have in place at this point, which they do have in place at this point in terms of the information available. Obviously, Macquarie is interested in ensuring this process keeps moving forward. It takes a lot of time, energy, and money to keep this going. Frankly, they need to figure out if there is a deal or not.

Mr. Ramage continued saying they appreciate that there is a lot to absorb and a lot of questions to resolve. They are here to help address those and get over that hump in the next 60 days. Every city has had various members present throughout this whole process. There is a lot of body of knowledge within each of the cities to answer a lot of the questions you may have. Hopefully that dialogue is already been happening. Frankly, a lot of what is in this report is not that new, they have just refined it. The concept has been talked about for quite a while amongst all the cities.

<u>Robert Hale, Councilmember, Midvale City</u>

Mr. Hale stated the Utah Infrastructure Agency has been involved in the financing of much of the growth recently, how will this project impact the UIA commitment?

Mr. Ramage replied Macquarie has assumed for purposes of this report that the UIA network, bonding and users stay in place as they are today. That is a working assumption. Macquarie's preference would certainly be to bring everybody onto the same network at the same utility fee and effectively address, and they need figure out in Milestone 2 and so on, how to address the existing bonding at UIA.

From the end user prospective, their working assumption would be they would either refund or credit people who have, for instance, paid upfront to have the connection installed. And for those folks with a lien on their home and an ongoing payment....the lien is not with Macquarie and their covenant is not with them, so this would be their preference on what to do. This would be their preference for what to do, but subject to negotiation would be to release that lien and to bring them onto the utility fee like everyone else. That has not been negotiated yet.

Mr. Hale asked if there had been discussion on what the municipalities could use the ubiquitous fiber to assist in making the $18 - $20 more viable for, not only municipalities, but Rocky Mountain Power, Questar Gas or others that provide services to the home also through a radio network now gathering in the data of usage by each home.

Mr. Ramage said absolutely this fiber is available for use in applications like smart meters. It will be available for Rocky Mountain Power, for instance, when and if they decide to replace their meters with smart meters and when and where they do that. Their investment program does not necessarily match up well to Macquarie's in terms of timing and so on. But absolutely that would be one of the things that, for instance, the wholesaler would look to do as part of its mandate to find other ways of leveraging the asset for other stake holders; for instance, by selling backhaul to Rocky Mountain Power.

Mr. Hale asked if there have been neighboring to the UTOPIA cities that have made inquiries or been approached on the cities part to market.

Mr. Ramage responded Macquarie is focused on the 11 cities. A bigger network is better, but they are focused on getting the 11 cities here to sign up. In a since, treat this as one discrete entity, or collection, of cities. They want to address that first before thinking outside of those parameters.

<u>Pete Ashdown – XMission</u>
Mr. Ashdown said his comment is related to where we are going to be in 30 years. He started his business 20 years ago so he has a picture of what the growth on the internet has been like. He started his business with five 14.4 KB per second modems. When you look at a GB connection, of which they have a few dozen customers using right now today on UTOPIA that is 75,000 times larger than what he started with.

Mr. Ashdown said we are starting to see a plateau on what you can do on the internet. As was mentioned earlier, if you are watching a Netflix movie that is about 3 Mbps and someone else starts watching a movie while you are watching your movie, it is a disaster. When we get into the 4K, which are new resolution screens, we are taking about 20 Mbps. The very cutting edge of video right now is 8K which is another doubling of resolution and detail on your television. If you are going to watch a compressed movie on that, it is about 500 Mbps. So, you get a few of those running in the house and your GB connection is going to be taxed. A lot of XMission’ s internal connections are 10 GB connections and Mr. Ashdown fully anticipates within the decade people are going to want 10 GB connections at home. Beyond that, he has a hard time imagining what people are going to want that is going to require more than 10 GB.

Mr. Ashdown said that fiber is very future proof. Fiber that was in the ground a long time ago is still being used today. It is what they lay underneath for transcontinental communications in the oceans. You just need to change the electronics out on each side to get more and more capacity. One thing Mr. Ashdown mentioned at a meeting last night is that they have lab tests that have shown that through a single strand of fiber, the same style of fiber that UTOPIA or Macquarie is going to have in your home, through that single strand of fiber they have been able to do capacities of up to 100 Terabytes per second.

If you consider how much data is flowing over the entire planet, people watching Netflix, cat videos and doing everything on the internet at any given moment and in addition to all the phone traffic, you are talking about less than 20 Terabytes per second. If somebody is asking for a Terabyte at their home, Mr. Ashdown would be interested in seeing what kind of equipment they are using to get there.

This is a very long term project and Mr. Ashdown thinks the plan supports that.

A question was asked regarding the individual that has the connection put to the side to their house. He asked if they were charge them if they would install the equipment in their house for free or would they have to pay a fee if they were to choose a different service provider.

Mr. Ashdown replied that under the framework of the agreement, the ISPs are responsible for getting service into the house. Regarding the equipment, he understands that at this stage it is a pretty simple proposition. You need to run an Ethernet cable to the outside of the house. Many houses already have this capability. If you do not, there may need to be a hole drilled.

Mr. Ashdown said he is suggesting that if any holes need to be drilled, there may be a nominal fee. If there is wiring inside the house that needs to be done, there is labor incurred and they will charge for that. Initially, you could run it through a window.

What they would like to do, in addition to having people in the field, is have an explanatory video that shows people how to do this themselves. Being a tech geek at home, Mr. Ashdown does not like people touching his house. He likes to do it all by himself. They are going to offer the video, but if people want someone to come out, under the terms of the agreement, they have to do that.

<u>Scott Nelson – Veracity Networks, Inc.</u>

Mr. Nelson said for the installation process and the basic service, they will be reimbursed by Macquarie a small fee to do that installation. There will be no additional charges to the homeowners to deliver the free service.

One of the things he wanted to comment on as an ISP is the fact they have had the opportunity to be included throughout this process and comment and refine the proposal that is coming to the cities. It is palatable to them and is something they can deliver a high level of service with great customer experience and that is how they have looked it. It is an all-inclusive solution that solves a problem that has exists for all 11 cities.

Mr. Ramage said one of the things he did not detail is that there will be a $50 installation credit paid to the ISPs for every standard installation completed. Macquarie will work to define what a standard installation is. For a standard installation, the user would not be charged anything, the ISP will assume that.

In some cases, it will be as easy as plugging into existing Cat 5 or Cat 6 cable. In some cases it will be a little more complicated than that. For situations that are nonstandard, like wiring the 8th bedroom, Macquarie would expect the ISPs and the homeowner to work something out.

Bryan Crane – Sumo Fiber

Mr. Crane said they do not have 30 or 20 years under their belt, they have 3 or 4 and they are the third largest internet service providers over UTOPIA right now. They are excited for this change. Mr. Crane said he personally has had UTOPIA in his home for seven years. There were hooking everyone up for free and nobody took them up on that.

He was the only one in his neighborhood hooked up on fiber and initially he was with XMission. Initially his speed was 10-20. Over the years, there have been more applications. Roku came out in 2008 and came up with all sorts of different channels. Mr. Crane has not had cable television or had to pay for phone services, other than over his internet, for the last seven years.

Things have been getting better and better and now Mr. Crane has 1 GB service. He was the first one in Layton and fifth one in the state. He always jokes that telling his grandchildren he had a 1 GB service, they will laugh at him and ask what he could have possible done with a 1 GB service.

With that technology, you allow so many people to have it and it forms a community where you share ideas and now his kids are programming on freeware that is available online that they were not able to do on that 1 or 3 MB connection. It has brought together a lot of these communities to generate new ideas and used for these faster speeds.

Mayor Bigelow thanked everyone for coming to the meeting. He pointed out they say under the blue bullet point that they are going to answer quarries form elected officials and key executives. For councilmembers who think of a question they have to have answered, they will make arrangements to have that communicated to them.

Mayor Bigelow said has he understands this process; it is the Mayors responsibility to go to their cities and communicate with the residents and answer their questions. He does not think Macquarie contemplated doing that.

Jennifer Kennedy, City Recorder